

PATTERN-PROFILE MEASURING DEVICE

This application claims priority to a provisional patent application having serial number 60/440,226 filed January 15, 2003.

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I. Background of the Invention

A. Field of Invention

This invention pertains to the art of methods and apparatuses associated with measuring
10 and profile tools utilized in crafts, particularly in the design of quilts, and clothing. More specifically, the invention provides an improved measuring tool that incorporates a variety of undulating profiles and is useful in the construction of quilts of other items of craftsmanship that incorporate undulating, curving, wavy or non-linear profiles.

15 B. Description of the Related Art

Straight edge rules are well known in the art. People engaged in crafts use straight edge rulers extensively to mark lengths, lines and angles. In quilting, the use of straight edges is central to creating the geometric designs that are incorporated into the quilt and often define the quilt under construction. Quilt construction is based on a foundation of individual fabric
20 elements that are joined together at the edges, typically by sewing, to form blocks, which blocks are joined together to form the larger blanket. If the edges of the individual fabric elements do not align properly, the design of the quilt can quickly become skewed, making the task of carrying out a quilt design very difficult. Small errors in the joining of individual fabric elements can be compounded over the course of several blocks, particularly if an error in laying

out the edges of the fabric elements is repeated. The result in such cases is often a quilt whose geometric design is uneven.

For reasons of simplicity in preparing consistently sized and shaped fabric elements, it is typically the case that quilt makers rely on fabric elements that have only straight edges,

5 including fabric squares, rectangles, triangles and parallelograms. These elements are easy to create with a straightedge ruler and a rotary cutter. However, many beautiful designs can be created, in quilt making as well as a variety of other artistic crafts and disciplines, by incorporating the design element of a wave or undulating contour. In quilting in particular, fabric elements having wavy or undulating edges may be joined together into larger blocks and, 10 ultimately, into a quilt that has a tremendous amount of visual interest because of the non-linear design. While it is relatively easy to ensure that fabric elements having straight edges will join properly, it is a difficult task to ensure that fabric elements having wavy or undulating edges match up to the degree necessary to create a quilt comprised of as many as several hundreds of such elements. While undulating contours can be drawn by hand using a straight edge to define 15 an axis and points spaced periodically at the crest and trough of each wave, this method of producing waves is wrought with risk of inconsistency and error. Therefore, what is needed is a measuring tool that also provides one or more edges defining a wave pattern or other series of undulations so that a repeated pattern of these undulations can be reproduced and cut on fabric swaths and so that the edges of these fabric pieces will join together accurately.

20 The present invention, therefore, provides improved methods and apparatuses for reproducing undulating contours on fabric or other material so that these elements, if desired, can be joined together in a consistent fashion to produce a design comprised of wavy elements.

II. Summary of the Invention

According to one aspect of the present invention, a new and improved pattern-profile
5 device is provided which permits an associated user to mark repeating undulating, wavy lines, or
other non-linear patterns on material.

According to another aspect of the invention, the pattern-profile device also operates as a
ruler to assist an associated user in measuring material.

According to a further aspect of the invention, the pattern-profile device defines multiple
10 different undulating patterns so as to permit an associated user with a variety of different patterns
to incorporate into an associated workpiece.

One advantage of this invention is that the pattern-profile device provides an easy means
for routinely and accurately reproducing undulating or wavy lines on an associated workpiece.

The present invention is a pattern profile measuring device comprising a body having at
15 least a first non-linear edge, the first non-linear edge is adapted to be used to make a portion of
an associated fabric pattern, wherein the fabric portion has an edge such that the shape of the
fabric portion edge resembles the first non-linear edge.

Another object of the present invention is to provide a pattern profile measuring device
wherein the body further comprises a second non-linear edge.

20 Still yet, another object of the present invention is to provide a pattern profile measuring
device wherein the second non-linear edge is adapted to be used to make a portion of the fabric
pattern, wherein the shape of the fabric portion edge resembles the second non-linear edge.

Further, another object of the present invention is to provide a pattern profile measuring device wherein the first non-linear edge is different from the second non-linear edge.

Yet, another object of the present invention is to provide a pattern profile measuring device wherein the body further comprises demarcations for measuring length.

5 Another object of the present invention is to provide a pattern profile measuring device wherein the first non-linear edge is a wavy pattern.

Further, another object of the present invention is to provide a pattern profile measuring device wherein the second non-linear edge is a wavy pattern.

10 Still yet, another object of the present invention is to provide a pattern profile measuring device wherein the first non-linear edge is adapted to be used to make associated fabric blocks for the fabric pattern.

Another object of the present invention is to provide a pattern profile measuring device wherein the second non-linear edge is adapted to be used to create an associated outside edge of the fabric pattern.

15 It is yet another object of the present invention to provide a pattern profile measuring device wherein the fabric pattern is a quilt.

Another object of the present invention is to provide a method for making a fabric pattern, comprising the steps of:

- 20 (a) providing a pattern measuring device comprising a body having a first non-linear edge;
- (b) providing pieces of fabric, each of the pieces having an edge;
- (c) cutting at least two pieces of fabric to a predetermined width;

- (d) overlapping the edges of the two pieces of fabric a predetermined amount;
- (e) positioning the first non-linear edge of the pattern measuring device over the fabric;
- (f) cutting the fabric along the first non-linear edge such that the fabric edges have a

non-linear pattern;

- 5 (g) mating the non-linear edge of the first piece of fabric with the non-linear edge of the second piece of fabric;

(h) sewing the non-linear edges together;

(i) repeating steps (c) to (g) to form a block of fabric;

(j) forming a plurality of fabric blocks; and

- 10 (k) sewing the fabric blocks together to create a fabric pattern having a non-linear pattern.

Another object of the present invention is to provide a method wherein the first non-linear edge is a wavy pattern.

- Still yet, another object of the present invention is to provide a method wherein the step of mating the non-linear edge of the first piece of fabric with the non-linear edge of the second
- 15 piece of fabric further comprises the step of mating a crest of the first piece of fabric with a trough of the second piece of fabric.

Further, another object of the present invention is to provide a method wherein the fabric pattern is for a placemat.

- Yet another object of the present invention is to provide a method wherein the fabric
- 20 pattern is for a pillow.

Still other benefits and advantages of the invention will become apparent to those skilled in the art to which it pertains upon a reading and understanding of the following detailed specification.

5 **III. Brief Description of the Drawings**

The invention may take physical form in certain parts and arrangement of parts, a preferred embodiment of which will be described in detail in this specification and illustrated in the accompanying drawings which form a part hereof and wherein:

10 FIGURE 1 is a plan view of the pattern-profile measuring device.

FIGURE 2 is a plan view of a quilt constructed using the present invention.

IV. Description of the Preferred Embodiment

15 Referring now to the drawings wherein the showings are for purposes of illustrating a preferred embodiment of the invention only and not for purposes of limiting the same, FIGURE 1 shows a pattern-profile measuring device 2 having a length l and a width w . The device 2 has a first side 10 and a second side 20, which first and second sides 10, 20 may be approximately parallel. The device 2 further has a first non-linear pattern edge 30 and a second non-linear
20 pattern edge 50. A first aligning gauge line 98 may be imprinted, by means selected with sound engineering judgment, along the length l of the device 2. A second aligning gauge line 99 may also be imprinted on the device 2. The gauge lines 98, 99 aid the use I positioning the device relative to the fabric (not shown). Rule lines 100a, 100b, 100c, 100d, may be imprinted on the

device 2 extending perpendicularly inwardly from each of the first and second pattern edges 30, 50. These rule lines 100a, 100b, 100c, 100d may demarcate inches and portions thereof, or alternatively, may define metric measures. The device 2 is approximately rectangular; however, it is contemplated that the device could be approximately “L”-shaped or “T”-shaped, having one
5 or more additional “arms” extending from the device 2. The additional arms may provide additional edges for further patterns. Any other shape of the device 2 selected with sound engineering judgment may also be selected. The device 2 may have mounting means 92, such as a hole, hook or screw for mounting the device 2 on an associated wall, door or other similar location.

10 The device 2 may be constructed out of a transparent, sturdy material, such as plastic, tempered glass or acrylic. The material selected may be impact or shatter resistant; however, any suitable material may be selected with sound engineering judgment. The device 2 may be transparent in order to permit viewing of the rule lines 100a, 100b, 100c, 100d and the gauge lines 98, 99 on the associated material placed underneath the device 2.

15 The length l may be 24 inches; however, the length l may be in the range of approximately 6 inches to 48 inches. The width w of the device 2 may vary along the length l depending on the interaction between the first pattern edge 30 and the second pattern edge 50. However, the width w may be a minimum of approximately 1.0 inches in order to ensure sufficient rigidity of the device 2. Alternatively, the width w as well as the length l of the device
20 2 may be any measure of distance selected with sound engineering judgment. The device 2 may have a thickness t of approximately 0.125 inches. The thickness t may be in the range of approximately 0.1 inches to 0.50 inches or may be any thickness selected with sound engineering

judgment so that the device 2 maintains sufficient rigidity to withstand the sideways pressure of an associated rotary cutter without deforming.

With continuing reference to FIGURES 1 and 2, the first pattern edge 30 may be generally in the form of an undulating pattern comprised of at least a first wave or a plurality of waves 32, 33, 34. The first wave 32, 33, 34 may have a first amplitude a_1 and a first wavelength u_1 . The first amplitude a_1 of the first wave 32, 33, 34 may be equal between each of the first waves 32, 33, 34. The first amplitude a_1 may be approximately 0.25 inches; however, it is contemplated that the first amplitude a_1 may be in the range of approximately 0.1 inches to 2.0 inches. Similarly, the first wavelength u_1 of the first wave 32, 33, 34 may be equal between each of the first waves 32, 33, 34. The first wavelength u_1 may be approximately 5.25 inches; however, the first wavelength u_1 may be in the range of approximately 1.0 inch to 12 inches. Any measure of first amplitude a_1 and first wavelength u_1 selected with sound engineering judgment may alternatively be used. It is also contemplated that the first pattern edge 30 may be comprised of a more complex structure having waves of differing wavelength and amplitude interposed atop one another in an array.

The second pattern edge 50 may be generally in the form of an undulating pattern comprised of at least a second wave or a plurality of waves 52, 53, 54, the second wave 52, 53, 54 having a second amplitude a_2 and a second wavelength u_2 . As previously discussed, the second amplitude a_2 of the second wave 52, 53, 54 may be equal between each of the second waves 52, 53, 54. The second amplitude a_2 may be approximately 0.33 inches; however, it is contemplated that the second amplitude a_2 may be in the range of approximately 0.1 inches to

2.0 inches. Similarly, the second wavelength λ_2 of the second wave 52, 53, 54 may be equal between each of the second waves 52, 53, 54. The second wavelength λ_2 may be approximately 4.25 inches; however, the second wavelength λ_2 may be in the range of approximately 1.0 inch to 12 inches. Any measure of second amplitude a_2 and second wavelength λ_2 selected with
5 sound engineering judgment may alternatively be used. It is further contemplated that the second pattern edge 50 may be comprised of a more complex structure having waves of differing wavelength and amplitude interposed atop one another in an array.

The second pattern edge 50 may be identical to the first pattern wave edge 30; however, it is contemplated that to provide a more diverse device 2, the second pattern edge 50 may be
10 different than the first pattern wave edge 30, having a second wave 52, 53, 54 with a differing second amplitude a_2 and second wavelength λ_2 than the first amplitude a_1 and the first wavelength λ_1 of the first wave 32, 33, 34. It is also contemplated to be within the scope of the present invention that the first and second edges 30, 50 may take the form of any non-linear configuration.

15 To utilize the present invention, the apparatus described herein is provided. Further, the user obtains fabric or some suitable material. The user ensures that its cutting mat (not shown) measures correctly to “square up” fabric blocks that will be constructed. Note that the method now described refers to the non-linear edge being a wavy pattern. It should be understood that this methodology will apply to any non-linear edge that is utilized. The fabric is cut to a
20 predetermined width, such as 2 ½ inches, or any other desired width. Two pieces of fabric are positioned in an overlapping orientation, preferably in the amount of one inch, although not limited thereto. The device is positioned over the fabric with the first non-linear edge over the

overlapping section. The user cuts the fabric with any means chosen with sound engineering judgment, such as, but not limited to a rotary cutter. This cut results in the two pieces of fabric having the same non-linear profile. Next, the two pieces of fabric are positioned one over the other such that the crests and troughs of the wavy profile are aligned. In order to more easily

5 sew the two pieces of fabric together, the user clips the troughs. Preferably, although not required, the clippings should not be more than 1/8 inch deep and 3/8 inch apart. Continuing with the foregoing novel method, the two fabric pieces are repositioned so that the crests of the first fabric mate with the troughs of the second fabric pieces. The user sews the two pieces together along undulating profile. The user may continue to add pieces until a desired fabric
10 block is complete. As the fabric block is assembled, the cutting mat may be utilized to ensure the fabric block is square. As fabric blocks are made, they may be sewn together to form a fabric pattern in the form of a quilt 200, placemat, pillow covering, or clothing, or any other application chosen in accordance with sound engineering judgment, as shown in FIGURE 2. The user may also use the second non-linear side to create the outside edge of the fabric pattern.

15 The preferred embodiments have been described, hereinabove. It will be apparent to those skilled in the art that the above methods may incorporate changes and modifications without departing from the general scope of this invention. It is intended to include all such modifications and alternatives in so far as they come within the scope of the appended claims or the equivalents thereof.

20 Having thus described the invention, it is now claimed: